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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,299	09/17/2003	David William Trepress	282530US8X	4575
22850 7590 11/01/2007 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER LONG, ANDREA NATAE	
			ART UNIT 2176	PAPER NUMBER
			NOTIFICATION DATE 11/01/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/664,299

Applicant(s)

TREPESS ET AL.

Examiner

Andrea N. Long

Art Unit

2176

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL ACTION

Applicant's Remarks

1. Claims 1-20 and 22 are currently pending. Claims 1, 10, 12, 13, 16, and 17 are amended. Claim 21 is cancelled. The cancellation of claim 21 renders the rejection of claim 21 under 35 U.S.C. 101 moot.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 12, 16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohonen et al (Self Organization of a Massive Document Collection, 2000), hereinafter "Kohonen".**

As to independent claim 12, Kohonen teaches an information storage system in which a set of distinct information items are processed so as to map to respective nodes in an array of nodes by mutual similarity of the information items, such that similar information items map to nodes at similar positions in the array of nodes, the system comprising:

a generator configured to generate a feature vector derived from each information item, the feature vector for an information item representing a set of frequencies of occurrence, within

Art Unit: 2176

that information item, of each of a group of information features (page 576, section A → Kohonen teaches documents that are represented as vectors in which each component corresponds to the frequency of occurrence of a particular word in the document); and

mapping logic configured to map each feature vector to a node in the array of nodes, the mapping between information items and nodes in the array including a dither component so that substantially identical information items tend to map to closely spaced but different nodes in the array (Fig. 6, page 574, section B → Kohonen teaches classical methods of mapping data items and Fig. 6 teaches items closely spaced but in different areas of the display).

As to independent claim 16, claim 16 incorporates substantially similar subject matter as claimed in claim 12 and is rejected along the same rationale.

As to dependent claim 18, Kohonen teaches computer software having program code for carrying out a method according to claim 16 (page 575 → Kohonen teaches that his group developed software for the method).

As to dependent claim 19, Kohonen teaches providing medium for providing program code according to claim 18 (page 575 → Kohonen teaches that his group developed software for the method and that the system operates in real time on in fits medium sized computers).

As to dependent claim 20, Kohonen teaches said medium being a storage medium (page 575 → Kohonen teaches that his group developed software for the method and that the system

Art Unit: 2176

operates in real time on in fits medium sized computers. It is well known in the art that software is contained on a medium such as a CD or can be located on the hard drive of a medium sized computer).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 2, 5, 10, 11, 14, 15, 17, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over John Sharp (WO 02/27508 A1), hereinafter "Sharp".**

As for independent claim 1, Sharp teaches an information retrieval system in which a set of distinct information items map to respective nodes in an array of nodes by mutual similarity of said information items, so that similar information items map to nodes at similar positions in said array of nodes; said system comprising:

(i) a graphical user interface for displaying a representation of at least some of said nodes as a two-dimensional display array of display points within a display area on a user display (page 3 lines 23-24, page 4 lines 1-3, Fig. 2 → Sharp teaches a GUI for displaying a collection of data items in a x-y coordinate system to a user to interact with);

(ii) a user control for defining a two-dimensional region of said display area (page 3 lines 6-8 → Sharp teaches a GUI generator that controls the display of results set on an axis);

(iii) a detector for detecting those display points lying within said two-dimensional region of said display area (page 3 lines 6-13 → Sharp teaches a GUI generator which includes a zooming tool and a marquee tool for providing additional functions for a user to manipulate the data items and select the data items); and

(iv) said graphical user interface also displaying a list of data representing information items, being those information items mapped onto said nodes corresponding to display points displayed within said two-dimensional region of said display area (page 3 lines 11-17 → Sharp teaches wherein data items can be displayed in a collection bin as thumbnails, the thumbnails representing an individual item).

Sharp does not teach wherein the graphical user interface concurrently displays a list of data items representing information items with the representation of the nodes in the two-dimensional display. A person of ordinary skill in the art, upon reading the system of Sharp, would also have recognized the desirability to improve the system of displaying the list concurrently with the nodes. Display both the list and node concurrently would allow the user have multiple options for identifying information while eliminating the step of navigating back and forth through multiple screens to obtain the information.

As for dependent claim 2, Sharp teaches in which said information items are mapped to nodes in said array on the basis of a feature vector derived from each information item (page 7 lines 12-23 → Sharp teaches that the data items are plotted by qualitative attributes that

Art Unit: 2176

represent properties of each data item. Examiner notes, that qualitative attributes are analogous with feature vector).

As to dependent claim 5, Sharp teaches in which said information items comprise textual information, said nodes being mapped by mutual similarity of at least a part of said textual information (page 8 lines 3-24 → Sharp teaches data items being plotted according to keyword and qualitative attributes).

As to dependent claim 10, Sharp teaches a user control for choosing one or more information items from said list; and said graphical user interface being operable to alter said manner of display within said display area of display points corresponding to selected information items (page 3 lines 6-13 → Sharp teaches a GUI generator which includes a zooming tool and a marquee tool for providing additional functions for a user to manipulate the data items and select the data items).

As to dependent claim 11, Sharp teaches in which said graphical user interface is operable to display in a different colour and/or intensity those display points corresponding to a results list (page 4 lines 7-9, page 12 lines 14-21). Sharp additionally teaches choosing one or more information items from said list (page 3 lines 6-13). While Sharp does not forcefully teach changing the color or intensity of display points when a user selects it from a list, it would have been obvious to one skilled in the art at the time the invention was made to have included

Art Unit: 2176

this feature in the system to allow for increased visual enhancement of items that are of interest of a user.

As to dependent claim 14, Sharp teaches a data processing device comprising the information system (page 6 lines 1-5, “personal computer”). While Sharp does not forcefully disclose a portable data processing device, it is reasonable for one skilled in the art to have implemented the system on a portable device such as a laptop computer, that embodies the same capabilities of that of a personal computer, for a user’s convenience.

As to dependent claim 15, Sharp teaches a processing apparatus comprising a system according to claim 1 (page 6 lines 1-5, “personal computer”).

As to independent claim 17, claim 17 incorporates substantially similar subject matter as claimed in claim 1 and is rejected along the same rationale.

As to dependent claim 22, Sharp teaches computer software having a program code for carrying out the method according claim 17 (page 5 lines 26-28 → Sharp teaches wherein software facilitates the method of the invention).

6. **Claims 3, 4, and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp in view of Kohonen.**

As for dependent claim 3, Sharp teaches qualitative attributes “feature vector” that represent properties of data items. However, Sharp does not teach wherein the “feature vector” represents frequencies of occurrence. Kohonen teaches a feature vector for an information item represents a set of frequencies of occurrence, within that information item, of each of a group of information features (page 576, section A → Kohonen teaches where documents are represented as vectors in which each component corresponds to the frequency of occurrence of a particular word in a document).

It would have been obvious to one skilled in the art at the time the invention was made to have combined the qualitative attributes of Sharp with the representation of frequencies of occurrence of a word in a document of Kohonen to reflect the significance or power of a document amongst other documents.

As to dependent claim 4, Sharp teaches in which said information items comprise textual information (page 8 lines 3-8 → Sharp teaches that the data items include keywords, for text-based content searches). Sharp additionally teaches qualitative attributes “feature vector” that represent properties of data items. Sharp does not teach feature vector represents a set of frequencies of occurrence. Kohonen teaches a feature vector for an information item represents a set of frequencies of occurrence, within that information item, of each of a group of words (page 576, section A → Kohonen teaches where documents are represented as vectors in which

Art Unit: 2176

each component corresponds to the frequency of occurrence of a particular word in a document).

It would have been obvious to one skilled in the art at the time the invention was made to have combined the qualitative attributes of Sharp with the representation of frequencies of occurrence of a word in a document of Kohonen to reflect the significance or power of a document amongst other documents.

As to dependent claim 6, Sharp teaches data items including textual information. Sharp does not teach in which information items are pre-processed for mapping by use of a threshold frequency. Kohonen teaches in which said information items are pre-processed for mapping by excluding words occurring with less than a threshold frequency amongst said set of information items (page 581, section A → Kohonen teaches words occurring less than 50 time in the whole corpus, as well as a set of common words in a stopword list of 1335 words were removed). It is reasonable for one skilled in the art to include that the pre-processing for mapping may also exclude words occurring with more that a threshold, to reduce the redundancy of unwanted words when extracting relevant terms.

It would have been obvious to one skilled in the art at the time the invention was made to have combines the textual information of Sharp with the pre-processing of Kohonen to add value to text retrieval.

As to dependent claim 7, Sharp teaches data items including textual information. Sharp does not teach in which information items are pre-processed for mapping by use of a threshold

Art Unit: 2176

frequency. Kohonen teaches in which said information items are pre-processed for mapping by excluding words occurring with less than a threshold frequency amongst said set of information items (page 581, section A → Kohonen teaches words occurring less than 50 time in the whole corpus, as well as a set of common words in a stopword list of 1335 words were removed).

It would have been obvious to one skilled in the art at the time the invention was made to have combines the textual information of Sharp with the pre-processing of Kohonen to add value to text retrieval.

As to dependent claim 8, Sharp teaches (i) search logic for carrying out a word-related search of said information items (page 8 lines 3-8 → Sharp teaches that users can search data items that contain entered keywords);

(ii) said search logic and said graphical user interface being arranged to co-operate so that only those display points corresponding to information items selected by said search are displayed (page 8 lines 3-24 → Sharp teaches that representations of the results of the keyword search in addition to the qualitative attributes are displayed to the user).

As to dependent claim 9, Sharp teaches the system of claim 1. However, Sharp does not explicitly teach a dither component for spacing identical information items. Kohonen teaches a dither component so that substantially identical information items tend to map to closely spaced but different nodes in said array (page 574, section B, Fig. 6 → Kohonen teaches that basis projection methods can be used to organize data items).

It would have been obvious to one skilled in the art at the time the invention was made to have combined the system of Sharp with the dithering component of Kohonen to provide a visually enriched representation of data items within a large collection of data items.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohonen in view of Hattori et al (Sequential Learning for SOM Associative Memory with Map Reconstruction, 2001), hereinafter "Hattori" in further view of Jockusch (An Instantaneous Topological Mapping Model for Correlated Stimuli, 1999), hereinafter Jockusch.

As to dependent claim 13, Kohonen teaches a storage system for mapping information items to nodes in an array of nodes. Kohonen also teaches logic configured to map a newly received information item to a node in the array of nodes (page 574, section B → Kohonen teaches new input items can be mapped straight into the most similar models). Kohonen does not teach a mapping error detector and detection error for a remapping process. Hattori teaches a mapping error detector configured to detect a mapping error as the newly received information item is so mapped (Abstract → Hattori teaches when a new input is applied, a part of map is reconstructed) and a remapping process of the set of information items and the newly received information item (Abstract → Hattori teaches remapping when a new input is applied). Jockusch teaches logic responsive to detection that the mapping error exceeds a threshold error amount (page 531, 2nd column, 1st paragraph, page 533, 1st column, 1st paragraph → Jockusch teaches defining a threshold value for an error which has a desired mapping resolution).

It would have been obvious to one skilled in the art at the time the invention was made to have combined the storage system of Kohonen with the error detecting of Hattori in addition to the threshold error of Jockusch to allow for appropriate mapping for node that are too close to each other.

Response to Arguments

8. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

However, the Examiner will address that Applicant's assertion that Sharp fails to disclose or suggest that a set of distinct information items map to respective nodes in an array of nodes by mutual similarity of said information items, so that similar information items map to nodes at similar positions in said array of nodes. Sharp teaches that each data item is associated with a plurality of qualitative attributes, which each represent a quality of the content item identified by the data item. Once collected a graph is generated to display representations of the data items, which uses spatial relationships among the data items representations to represent relationships among the data items based on two or more of their associated qualitative attributes.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., learning and self organizing maps, the term "nodes" is associated with a particular meaning. That is, in an array of nodes, each node is associated with an information item such that the map can be trained in accordance with training data.) are not recited in the rejected claim(s). Although the claims

are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

9. In regard to claim 12, Applicant's arguments filed 08/17/2007 have been fully considered but they are not persuasive.

Applicant asserts that Kohonen fails to disclose or suggest that mapping between information items and nodes in the array include a dither component so that substantially identical information items tend to map closely spaced but different nodes in the array.

The Examiner respectfully disagrees. Kohonen teaches the different aspects of the topic may be found within different clusters or areas of the map. By looking an the enlarging of a cluster of map information items in Figure 6, it shows that while the cluster looks to be mapped to one node, the cluster is formed due to the related information of the items and is therefore clustered together, however each item is still individually mapped to an individual node.

In light of the explanation above of Kohonen teaching of mapping between information items and nodes in the array, a *prima facie* case of obviousness has been presented for claim 9, with the combination of Sharp and Kohonen.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

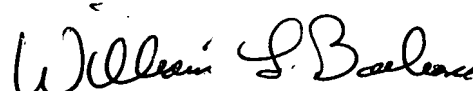
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea N. Long whose telephone number is 571-270-1055. The examiner can normally be reached on Mon - Thurs 6:00 am to 3:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Hutton can be reached on 571-272-4137. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2176

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrea Long
October 23, 2007


WILLIAM BASHORE
PRIMARY EXAMINER